
PLANT RESCUE AND PROTECTION PLAN

1. PURPOSE

The purpose of the plant rescue and protection plan is to implement avoidance and mitigation measures to reduce the impact of the development of the Konkoosies II PV project on listed and protected plant species and their habitats and to provide guidance on search and rescue of species of conservation concern.

2. RELEVANT ASPECTS OF THE SITE

Plant species of conservation concern which may occur in the area were identified a priori as far as possible, based on a species list for the broad area extracted from the SANBI SIBIS database for the quarter degree squares 2819CD, DC and 2919AB and BA. Species of conservation concern were extracted from the list based on their status according to Red List of South African plants version 2014.1 (<http://redlist.sanbi.org/>) as well as species listed as endangered or protected under the Northern Cape Nature Conservation Act (No 9 of 2009). In some cases species are listed under both, but in general the provincial legislation is more inclusive and attempts to provide some protection for species, genera and families likely to vulnerable to illegal plant collection and other similar threats. Of particular relevance to the current study are the following, which are extracted from the legislation and are not intended to provide a comprehensive list of all protected species, only those which are likely to be encountered in the area. The reader is referred to the schedules of the Act for a full list of species listed under the Act.

Schedule 1: Specially Protected Flora

- » Family GERANIACEAE - *Pelargonium* spp. all species

Schedule 2 Protected Flora

- » Amaryllidaceae – All species
- » Apiaceae – All Species
- » Apocynaceae – All Species
- » Asphodelaceae – All species except *Aloe ferox*
- » Iridaceae – All species
- » Mesembryanthemaceae – All species
- » Capparaceae - *Boscia* spp. Sheperd's trees, all species
- » Androcymbium spp. - All species
- » Crassulaceae - All species except those listed in Schedule 1
- » Euphorbiaceae - *Euphorbia* spp. All species
- » Oxalidaceae - *Oxalis* spp All species
- » Portulacaceae - *Anacampseros* spp. All species

Apart from the above, flora all species of geophytes and large woody species at

the site were recorded irrespective of their status. This is to ensure that all species of potential concern are captured as well as to allay the fears of the developer or ECOs which are not always familiar with the vegetation of the area concerned and are not always able to identify species reliably in the field.

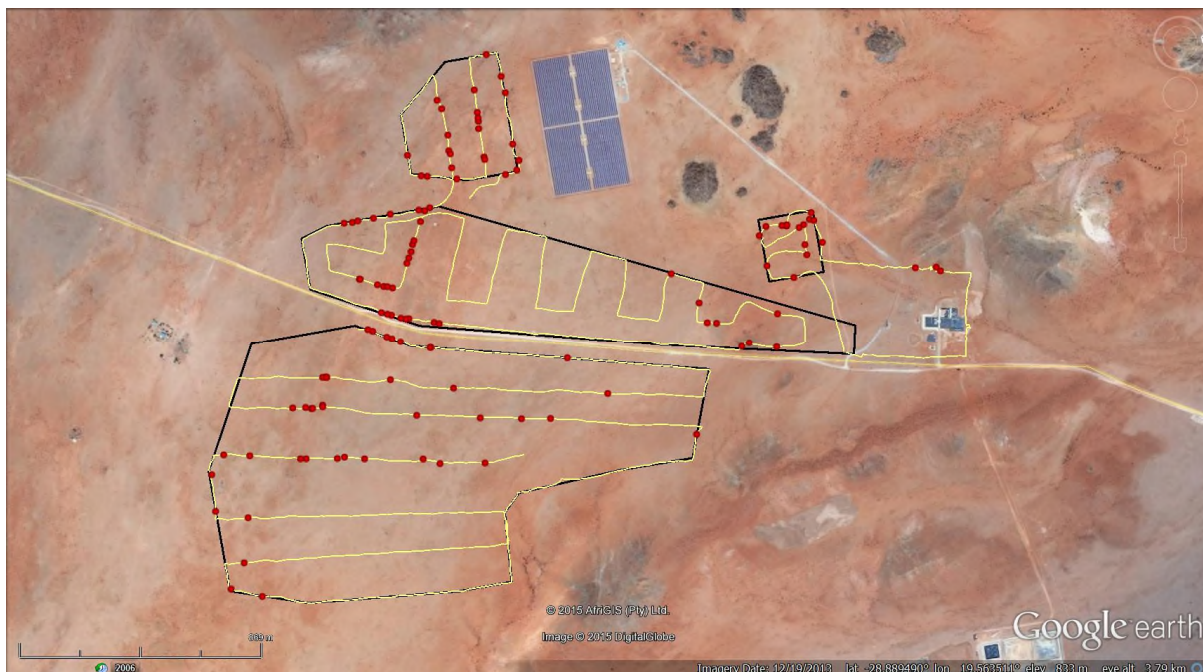


Figure 1: Walk-through track with the observations of protected and listed species that were found during the walk-through. As can be seen from the track, these tend to be clumped within certain parts of the site, which is related to local soil conditions.

The distribution of species of conservation concern at the site is depicted above in Figure 1. Although such species are widely distributed across the site, they are also clumped as a result of subtle changes in soil conditions across the site. Geophytes tended to be more common on shallow, rocky soils, while most other species were more abundant on deeper sands. Species recorded on site are listed in Table 1.

Table 1: Summary of listed and protected species which were encountered during the walk-through as well as an extrapolated total number of individuals that would be affected of each species

Species	Protection Status	Observed	Estimated Total
<i>Acacia erioloba</i>	National	1	1
<i>Albica setosa</i>	None	31	310
<i>Euphorbia multiceps</i>	Provincial - Schedule 2	3	<10
<i>Hoodia gordonii</i>	National	7	<15
<i>Oxalis annae</i>	Provincial - Schedule 2	33	330

Species	Protection Status	Observed	Estimated Total
<i>Parkinsonia africana</i>	None	1	2
<i>Sarcocaulon patersonii</i>	None	1	5
<i>Boscia foetida</i>	Provincial - Schedule 2	43	<60

Oxalis annae was the most common species and was widely distributed across the site. *Albuca setosa* was also common, but is not a protected species. Perhaps the species of greatest concern in terms of the development would be *Boscia foetida* which occurred at a relatively low density throughout the site. The individuals present were all small (<2m) and many were very heavily grazed and less than 1m tall (Plate 2). The total number of individuals affected is relatively low in comparison with the total number present in the local landscape.



Typical *Boscia foetida* subsp. *foetida* individual at the site. Although some plants are taller and have escaped heavy grazing to some degree, most individuals are less than 1m tall and heavily impacted by grazing pressure.

A few *Hoodia gordonii* plants are present within the site and this is the only species present where translocating the affected plants outside of the affected area is a viable possibility. A few individuals of *Acacia erioloba* are present in the vicinity of the substation, but it is likely that these can be left alone as they will not be within the footprint of the PV areas and are not likely to interfere with the grid connection in any way.



Hoodia gordonii

3. PRINCIPLES FOR SEARCH AND RESCUE

Successful plant rescue can only be achieved if:

- » Species can be removed from their original habitat with minimal damage to the plant, especially the roots.
- » All plants removed are safely stored and treated according to their specific requirements prior to being transplanted again.
- » They are relocated into a suitable habitat and protected from further damage and all disturbances to aid their re-establishment.
- » Timing of planting activities is planned with the onset of the growing season.
- » Steps are taken where necessary to aid the initial establishment of vegetation, including occasional watering.

The following principles apply in terms of plant rescue and protection:

- » A permit is required to translocate or destroy any listed and protected species even if they do not leave the property. This permit should be obtained prior to any search and rescue operations being undertaken.
- » Where suitable species are identified, a search and rescue operation of these species should be undertaken within the development footprint prior to the commencement of construction.
- » As far as possible, timing of search and rescue activities should be planned with the onset of the growing season.
- » Affected individuals should be translocated to a similar habitat outside of the development footprint and marked for monitoring purposes. For each individual plant that is rescued, the plant must be photographed before

removal, tagged with a unique number or code and a latitude longitude position recorded using a hand-held GPS device.

- » The rescued plants must be planted into a container to be housed within a temporary nursery on site or immediately planted into the target habitat.
- » Rescued plants, if re-planted back in the wild, should be placed as close as possible to where they were originally removed. Re-planting into the wild must cause as little disturbance as possible to existing natural ecosystems. The position of the rescued individual/s must be recorded to aid in future monitoring of that plant.
- » During construction, the ECO must monitor vegetation clearing at the site. Any deviations from the plans that may be required should first be checked for listed species by the ECO or Environmental Officer and any listed species present which are able to survive translocation should be translocated to a safe site.
- » Any listed species suitable for translocation observed within the development footprint that were not previously observed be translocated to a safe site.
- » The collecting of plants or their parts should be strictly forbidden. Appropriate signage in this regard should be placed at the entrance gates to the site. Staff should be informed of the legal and conservation aspects of harvesting plants from the wild as part of the environmental induction training.
- » Sensitive habitats and area outside project development should be clearly demarcated as no go areas during the construction and operational phase to avoid accidental impacts.

**APPENDIX A:
PHOTOGRAPHIC GUIDE TO PROTECTED
SPECIES RECORDED WITHIN THE SITE**

PHOTOGRAPHIC GUIDE TO PROTECTED SPECIES

Photographs of the species recorded at the site are illustrated below. It is important to note that none of the geophytes were in flower and as a result, the identity of some of the species cannot be provided with complete confidence.



Hoodia gordonii



Boscia foetida subsp. *foetida*



Albuca setosa



Oxalis annae